UCD GEARY INSTITUTE
DISCUSSION PAPER SERIES

The division of parental transfers in Europe

Javier Olivera Angulo
University College Dublin

Geary WP2012/20
August 1, 2012

The division of parental transfers in Europe

Javier Olivera Angulo

University College Dublin

javier.oliveraangulo@ucd.ie

This version 01 August, 2012

Abstract:

In this paper we explore the patterns of the division of *inter-vivos* financial transfers from parents to adult children in a sample of 12 European countries. We exploit two waves of the Survey of Health, Aging, and Retirement in Europe (SHARE) for 50+. Contrary to previous studies, we find a higher frequency of parents dividing equally their transfers. We argue that altruistic parents are also concerned with norms of equal division, and hence don't fully offset child income differences. The parents start to give larger transfers to poorer children if the child income inequality becomes unbearable from the parent's view. We find econometric evidence suggesting this behaviour under different specifications and strategies. Furthermore, contextual variables like the gini coefficient and pension expenditures help to explain country differences with respect to the division of *inter-vivos* transfers. The lower frequency of equal division found in studies with American data may respond to the higher inequality and relatively lower pension expenditures in US.

JEL classification: D19, D64, J18.

Keywords: inter-vivos transfers, altruism, equal division, Europe

---

Disclaimer: This paper uses data from SHARELIFE release 1, as of November 24th 2010 and SHARE release 2.3.1, as of July 28th 2010. The SHARE data collection has been primarily funded by the European Commission through the 5th framework programme (project QLK6-CT-2001- 00360 in the thematic programme Quality of Life), through the 6th framework programme (projects SHARE-I3, RII-CT- 2006-062193, COMPARE, CIT5-CT-2005-028857, and SHARELIFE, CIT4-CT-2006-028812) and through the 7th framework programme (SHARE-PREP, 211909 and SHARE-LEAP, 227822). Additional funding from the U.S. National Institute on Aging (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, Y1-AG-4553-01 and OGHA 04-064, IAG BSR06-11, R21 AG025169) as well as from various national sources is gratefully acknowledged.

1. Introduction

Considerable research has been devoted to study the motives of financial transfers from parents to adult children as this enables to asses the effects of intergenerational redistributive policies. For example, imagine that a redistributive policy takes one dollar from the young and gives it to the old. From the seminal works of Becker (1974), Barro (1974) and Tomes (1981) we learnt that altruistic parents will offset the reduction in child income by making financial transfers to their children. In contrast, the so-called exchange approach (e.g. Bernheim et al, 1985; Cox, 1987) consider that there are strategic motives to transfer, meaning that parents give financial transfers to instil some services (help, visits, etc.) from children. As a result, parents don't necessarily compensate a reduction in child income, and therefore the redistributive policy can still be effective.

It is important to distinguish the types of transfers involved because they have different implications and the literature has treated them differently. The transfers can be *inter-vivos* or bequests. In the empirical literature, mostly based on American data, it is generally accepted that *inter-vivos* transfers are given unequally to children while bequests are mainly equally shared. The works by Wilhelm (1996), McGarry (1999) and Norton and Van Houtven (2006) find that about 69-77%, 82% and 95% of parents intend to give equal inheritances, respectively. By contrast, equal *inter-vivos* transfers occur only in about 6.4% to 9.2% households (McGarry and Schoeni, 1995; McGarry, 1999; Hochguertel and Ohlsson, 2009). This present paper provides evidence of different patterns in Europe. A quick inspection to the Survey of Health, Aging, and Retirement in Europe (SHARE) for 50+ people reveals that about 63%-98% of the deceased parents divided their states equally among their children during 2006-2009. So, there are not remarkably differences between US and Europe in the division of bequests. However, there is higher frequency of parents giving equal *inter-vivos* transfers (see table 1). In average, 35.1% of parents make equal transfers but there are countries with a high equal division frequency like Sweden (45.6%), Denmark (44.4%) and Belgium (42.9%). These results are not explained by the standard approaches, and pose an interesting challenge to the empirical literature on family transfers.

Table 1. Percentage of parents giving equal transfers to children

Country	%	N
Sweden	45.6	792
Denmark	44.4	482
Belgium	42.9	331
Czech Republic	40.3	159
Italy	36.4	214
Netherlands	35.7	445
France	32.9	359
Austria	32.2	270
Switzerland	29.7	185
Germany	25.7	452
Poland	19.4	108
Greece	15.5	278
Spain	12.8	47
Ireland	7.7	65
Total	35.1	4,187

For parents with at least two children (>18 and not living in the same household) and conditional on the existence of at least one transfer.
Source: SHARE-Release 2.3.1, waves 1 and 2.

The aim of this paper is to study the patterns of the division of parental *inter-vivos* financial transfers in Europe. We do not study the equal division of bequests as this has been extensively studied in previous studies and there are not remarkable differences between Europe and US. We intend to contribute to the literature of transfers by exploring and explaining the equal distribution of *inter-vivos* transfers in Europe. This paper differs from the existing empirical literature in several respects. We exploit a new dataset with rich and harmonized information on parental transfers for a sample of 12 European countries. This complements the study of McGarry (1999) who also studied -though this was not her primary goal- the equal division of *inter-vivos* transfers with American data. We argue that parents may be regarded as equality-minded, meaning that they want to give equal transfers to all their children. We do not study the generation and strength of this social norm of equal division; instead, we consider a setting where altruistic parents are concerned with this norm at different degrees. Our setting shows the tension between being altruistic towards children (and hence dividing unequally) and following the norm of equal division. As the differences in the incomes of siblings enlarge, the compliance with the norm of equal division weakens, so that parents will prefer to make unequal transfers to their children. Our econometric results based on logit equations support this feature and are robust under different specifications and also when we account for unobserved heterogeneity. An interesting characteristic of SHARE is that the

respondents indicate the motives to make *inter-vivos* transfers. These motives can be related to altruism (e.g. meet basic needs), intended to help with large expenditures (e.g. a wedding, purchase a house) or with not specific reasons. Under altruistic motives only 24% of parents make equal transfers, but this figure rises to 54% under no specific reasons. This brings support to the idea of the existence of an equal division norm and that altruism rivals with this norm. Furthermore, contextual variables like the gini coefficient and pension expenditures help to explain country differences with respect to the division of transfers.

The paper is organized as follows. In the next section we present a theoretical discussion and our model setting. In section 3 we present our data, the empirical specification and discuss the results. In section 4 we suggest some possible explanations for the differences found between US and Europe with respect to the division of *inter-vivos* transfers. Finally, section 5 concludes.

2. Theoretical discussion

2.1 The equal division norm

There is an important amount of literature studying the motives to make transfers, but not many of them investigate the division of *inter-vivos* transfers[1]. In this paper we argue that parents may be regarded as equality-minded, so that they want to give equal *inter-vivos* transfers to all their children. Despite the facts that the distribution of financial gifts is hidden to the children and that children have different incomes, the parents want to follow the social norm of equal division. However, if differences in child income grow, the altruistic parent may be less willing to provide equal financial gifts, so that she may start to compensate poorer children with larger transfers. The roots of this reasoning are in the model of Bernheim and Severinov (2003), in which a norm of equal division can prevail even in presence of child income inequality, provided that the degree of this inequality is not too large. This approach considers a setting of altruistic parents where the *inter-vivos* transfers are treated as private information while bequests are public and signal parental

[1] Reviews of the literature on family transfers are reported in Pestieau (2003), Laferrere and Wolff (2006), Arrondel and Masson (2006) and Cox and Fafchamps (2008).

affection. We generalize that the degree of child income inequality weakens the equal division norm. Similarly, Halvorsen and Thoresen (2011) argue that parents want to divide their *inter-vivos* transfers equally because they are adverse to inequality of transfers, which rivals with their altruism. These authors exploit a Norwegian dataset of *inter-vivos* transfers to find econometric results suggesting such parental dilemma.

Lundholm and Ohlsson (2000) also assume the private/public information dimension of the transfers but they consider that parents care about a post mortem reputation. This reputation is damaged if parents depart from a social norm that stipulates equal sharing among siblings. The existence of this equal division norm is only assumed in Lundholm and Ohlsson (2000) but the model of Bernheim and Severinov (2003) explains its existence and strength. This model leads to equilibria where equal division of bequests and unequal distribution of financial gifts are feasible. In terms of Laitner (1997), a social norm of equal sharing of transfers may enhance efficiency by cutting rent seeking behaviour from siblings who compete for larger parental resources and help preserve peace in the family. For Wilhelm (1996), parents distribute equally their estates because they would suffer of psychic costs (jealousy and family conflict) if they deviate from equal division. Similarly, Cremer and Pestieau (1996) cite sociological theory to argue that the unaccomplished equal division of estates may lead to dispute among children, which parents fear the most, much more than not achieving an equal distribution of income. Moreover, in behavioural economic experiments, equal division is a norm that commonly emerges (see Camerer and Fehr, 2004; Fehr and Schmidt, 2002) from the interaction among individuals. In a model of social image, Andreoni and Bernheim (2009) argue in favour of a 50-50 norm for a variety of environments (including dictator games that can be extended to parental decisions about division of transfers) when individuals are fair-minded and people like to be perceived as fair.

The study by McGarry (1999) contains a brief section to study empirically the equality of *inter-vivos* transfers in US, although such results are not derived from the theoretical model presented. So, there are not sufficient explanations why parents divide their *inter-vivos* transfers equally. She finds that child income differences affect negatively the probability to make equal transfers. We build on those results the following theoretical framework.

2.2 A model of equal division of transfers

In a simple model of altruism, a parent cares about her own consumption and her children's consumption, so that she decides about the size and the distribution of an amount *T* of transfers between her two children. To do so, the parent maximizes a utility function to find the shares *1-p* and *p* of transfers *T* to allocate to child 1 and child 2, respectively:

$$U_u = \ln(y_p - T) + \beta[\ln(y_1 + (1-p)T) + \ln(y_2 + pT)] \quad (1)$$

$$\text{and assume } y_p \geq y_1 \geq y_2 \; ; \quad p, \beta \in [0,1] \quad (2)$$

The utility function is composed by the parental consumption and the consumption of each child valued through the parameter of parental altruism β. y_p and y_i are the parental and child incomes respectively. The F.O.C. for p and T are $\frac{\beta T(T+y_1-y_2-2Tp)}{(Tp+y_2)(T+y_1-Tp)} = 0$ and $\frac{\beta(1-p)}{(y_1+(1-p)T)} + \frac{\beta p}{y_2+pT} - \frac{1}{y_p-T} = 0$, respectively. The optimal values are $p = \frac{\beta(y_1-y_2+y_p)-y_2}{2\beta y_p-y_1-y_2}$ and $T = \frac{2\beta y_p-y_1-y_2}{1+2\beta}$. An equal division minded parent will use p=0.5, and reach the following level of indirect utility:

$$V_e = \ln\left(\frac{y_1+y_2+y_p}{1+2\beta}\right) + \beta \ln\left(\frac{y_1-y_2+4\beta y_1+2\beta y_p}{2(1+2\beta)}\right) + \beta \ln\left(\frac{y_2-y_1+4\beta y_2+2\beta y_p}{2(1+2\beta)}\right) \quad (3)$$

If a parent intends to give unequal transfers, she will get an indirect utility value larger than that of the case of equal transfers, given that the unequal transfers maximize equation 1.

$$V_u = (1+2\beta)\ln\left(\frac{y_1+y_2+y_p}{1+2\beta}\right) + 2\beta \ln(\beta) \quad (4)$$

However, a parent is also concerned with the norm of equal division of transfers as this is considered a way to be fair with children[2]. We can think that parents want to provide equal

[2] In terms of Kolm (2006), parents may give equal transfers because they have a constraint to be fair.

opportunities to children by giving equal *inter-vivos* transfers, no matter what is the relative income of the children. If the importance of the equal division norm is measured through a parameter $\gamma \in [0,1]$, the parents might follow a decision rule such that they will divide equally only if this action involves more utility given their taste for the equal division norm:

$$V_e \geq (1-\gamma)V_u \tag{5}$$

If the norm of equal division does not matter (γ=0) the parent will choose unequal sharing of transfers. The parent will give equal transfers only if equation 5 holds, which will happen for a high enough γ. A latent variable approach may help to clarify the parental dilemmas about the division of transfers and bring us readily to the empirical strategy. We define a latent variable z^* such that the parent gives equal transfers if $z^* \geq 0$, otherwise transfers are unequal.

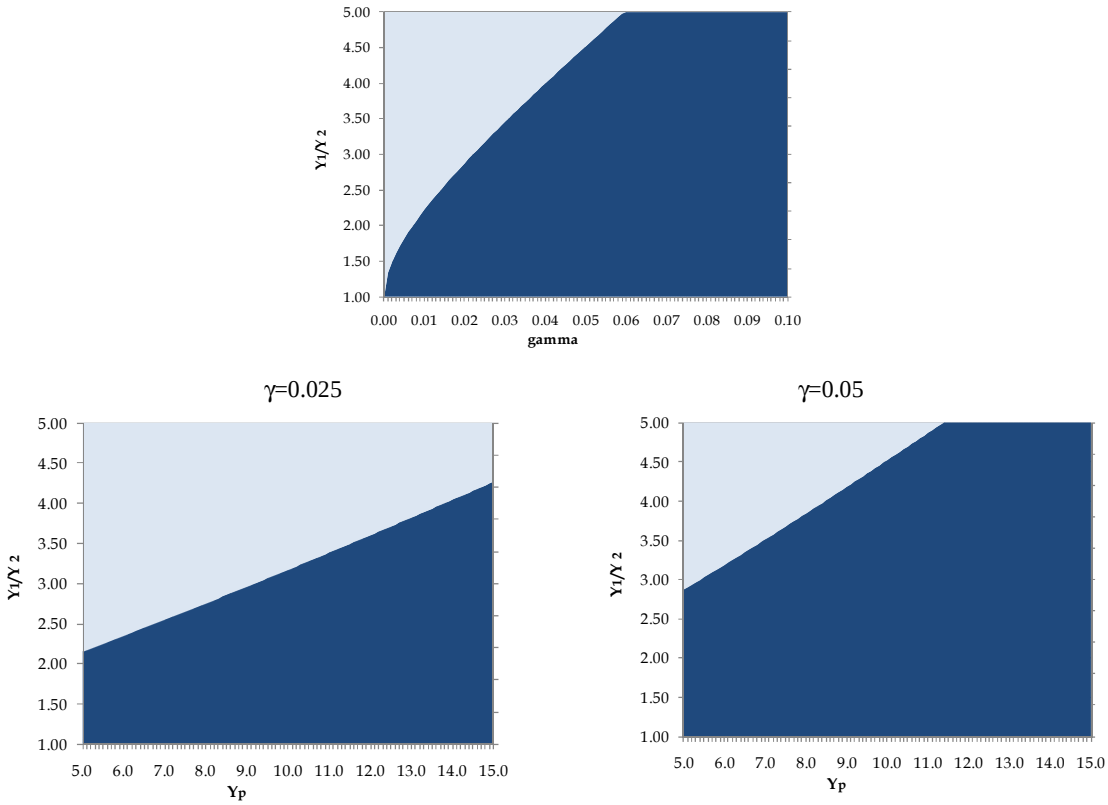
$$z^* = V_e - (1-\gamma)V_u \tag{6}$$

The negative or positive value of the latent variable depends on parameter and variable values. For example, from equation 6 it is clear that parents with a concern of equal division $\tilde{\gamma} \geq 1 - V_e/V_u$, will divide their transfers equally; otherwise, they will divide unequally. This means that a higher concern with the equal division norm will increase the probability of giving equal transfers. The key implication of this setting is that the latent variable diminishes when the child income inequality increases. Given that $y_1 \geq y_2$, an increase of child 1´s income is equivalent to a raise in the child income inequality. Finding a clear cut expression for $dz^*/dy_1 < 0$ is possible but tedious. Nonetheless, we can highlight the effects of different values of variables and parameters on z^* by simulation. The top panel of figure 1 shows the possibility of the equal division outcome and the effects of the child income inequality (measured as y_1/y_2) and γ. The darker area denotes all the points where equal division is chosen (i.e. $z^* \geq 0$) given the corresponding values of y_1/y_2 and γ (it is assumed β = 0.99; y_p= 10; y_2= 2). As is observed, child income inequality reduces the

occurrence of equal sharing, while the concern with equal division increases this. The other two panels of figure 1 show the effect of parental income on the occurrence of equal division. This effect is positive because the loss of parental utility due to the equal division is relatively less important for a wealthier parent.

In sum, the parent faces a trade-off. On the one hand, she wants to maximize her utility by giving unequal transfers, but on the other hand she is concerned to be fair by dividing the transfers equally. The next section presents the empirical analysis.

Figure 1. Existence of equal division norm



3. Data and results

3.1 The data

We use the two waves of the survey SHARE (released 2.3.1) which has representative and comparable information from standardised surveys applied to people over 50 years old in Israel and

14 European countries: Austria, Germany, Sweden, The Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Czech Republic, Poland and Ireland. The last three countries were added in the second wave. The interviews were taken in 2004/2005 and 2006/2007 for the first and second wave (Ireland entered in 2008). The variables are at individual, household and couple level. In total, SHARE includes 31,115 and 33,281 respondents in wave 1 and 2, respectively[3]. Apart from standard demographic variables, this dataset includes key questions about financial transfers (larger than 250 Euros in the last 12 months) between parents and children[4].

Our sample is composed by respondents with at least two children and provided that at least one of them received a parental financial transfer during the 12 months previous to the interview[5]. McGarry (1999) argues that zero transfers to all children do not mean a desire to treat all of them equally. Like other studies, we drop respondents living with their children in the same household or aged less than 18 years. According to McGarry (1999), transfers to non-adult children might be due to legal obligations, and it is difficult to quantify the value of shared food and housing for co-resident children. Respondents with missing values for financial transfers, and without demographic information for children were also dropped. In SHARE, some demographic information for children (e.g. education, marital status) is registered up to four children, and the amount of the financial transfer is recorded up to the third person that receives/gives it. Therefore, we only consider respondents who have at most three children (around 90% of respondents fulfilling the previous selections have up to three children). After all these selections, the sample contains 1,524 and 1,887 respondents in wave 1 and 2. The pooled sample consists of 3,411 observations but it represents 2,983 respondents as some of them (=214) have answers in both waves. In the pooled sample, 37.9% of parents give equal transfers.

[3] See Börsch-Supan et al (2005, 2008) and Börsch-Supan and Jürges (2005) for detailed information on the dataset and methodology.
[4] Although transfers below 250 are not captured, this amount represents a small enough percentage of parental income in Europe, so that the majority and more relevant of transfers are recorded in the survey. This is standard practise in other similar surveys like the Health and Retirement Study (HRS) and the Asset and Health Dynamics Study (AHEAD), which report transfers above US$500.
[5] We do not include Ireland as this country has not yet generated key variables such as the respondent's household incomes, for example. Observations from Switzerland are also dropped because there are no data available to impute labour income for respondents' children.

Similarly to other datasets based on middle age interviewees, in SHARE there is no direct information for children's income. However, we impute this variable by introducing some available child demographics into the earnings equation estimated with another dataset. This equation is estimated for each country and by gender with information from the European Union Statistics on Income and Living Conditions (EU-SILC) of year 2006[6] (see estimates in the appendix). Our use of this cross section intends to capture mainly current income of children, which is more reactive with parental transfers (McGarry, 1999). Other authors also impute earnings to solve the lack of information either for children or for parents. For example, Cox (1987) and Cox and Jakubson (1995) assume that children and parents live near each other, so that they use the average income of the metropolitan areas where children live to approximate the parental income. McGarry (1999) uses the mid points of child income intervals -answered by the parents- to impute child income, which are assumed to represent current income. Cox and Rank (1992) use earnings functions estimated with the same dataset that contains child information to impute parental income at the standardized age of 45. Although it would be desirable to correct the earnings equations for sample selection, there is not enough demographic information in SHARE for respondents' children. However, as suggested by Harmon et al (2003) in their analysis on the returns to education in European countries, some sample bias could in general exist but this appears not to be large.

We focus our attention on monetary transfers from parents to non co-resident adult children[7]. The descriptive statistics of the variables used are reported in table 2. The transfers are important for the children who receive them. The mean of the ratio of transfers received over child income is 0.142 for all respondents' children of our sample. Furthermore, all the transfers sent to children represent 12.3% of the parent's household income.

[6] The EU-SILC contains comparable cross-sectional and longitudinal multidimensional micro-data on income, poverty, social exclusion and living conditions in Europe. We construct the log of hourly labour income by using the gross yearly wage of employees in full-time jobs (aged 18-65). Due to availability, in Greece and Italy we use the monthly wage. This variable is regressed against variables measured in SHARE: age and its square, marital status and education level.

[7] Parents can also receive transfers from children, but this is minimal. According to Albertini et al (2007), only 3% of parents from the first wave of SHARE receive transfers from children, which contrast with the 21% of parents who give transfers to children.

Table 2. Statistics for variables in the pooled sample (wave 1 and 2)

Variable	unequal transfers		equal transfers		total		
	mean	std err	mean	std err	mean	std err	n
Parental characteristics							
Household income (ppp-Euro)	42,052	41,453	42,423	35,456	42,192	39,283	3,409
% giving equal transfers					0.38	0.49	3,411
Male	0.50	0.50	0.52	0.50	0.51	0.50	3,411
Married or with couple	0.76	0.43	0.79	0.41	0.77	0.42	3,408
Age	63.52	8.57	63.89	8.81	63.66	8.66	3,410
Years of education	11.88	3.92	11.60	3.73	11.77	3.85	3,385
Have long term illness	0.47	0.50	0.46	0.50	0.47	0.50	3,410
Number of children	2.34	0.47	2.23	0.42	2.29	0.46	3,411
Total transfers (ppp-Euro)	5,142	19,030	5,300	21,268	5,202	19,905	3,411
Children characteristics (differences)							
Age	5.20	3.46	4.52	2.91	4.95	3.28	3,404
Years of education	2.43	2.63	2.05	2.33	2.29	2.53	3,296
Labour income (ratio)	1.46	0.47	1.40	0.38	1.44	0.44	3,250
Number of children	1.09	1.12	1.01	1.15	1.06	1.13	3,409
Contact with parents, in days	110	118	81	104	99	114	3,409
Distance from parental home, in Km.	139	174	103	152	125	167	3,409

Similar to McGarry (1999), the variables for the children indicate the difference between the highest and lowest value of the relevant variable within the family. In the case of the imputed child income, we prefer to use the ratio between the highest and lowest values in order to make this variable comparable among countries[8]. So, y_{max}/y_{min} represents a measure of income inequality between children of the same family and this is the variable of our main interest.

3.2 Empirical strategy

We use the pooled sample to run a logit model of the probability of giving equal transfers, with the respondent as the unity of analysis. In terms of the latent variable z_{it}^{*}, the model can be expressed as:

$$z_{it}^{*} = X_{it}\beta + v_{it} \quad ; \quad t = 1,2 \qquad z_{it} = \begin{cases} 1 & if \ z_{it}^{*} > 0 \\ 0 & if \ z_{it}^{*} \leq 0 \end{cases} \tag{7}$$

The dependent variable takes value 1 if the parents give equal transfers to all their children, and zero otherwise. A parent decides to divide equally or unequally her *inter-vivos* transfers by

[8] Countries differ in currency, living standards and taxation systems. Furthermore, the imputed child labour income uses a measure of income that is harmonized in SILC-EU at great extent, but not completely. Therefore, the ratio of child incomes between siblings can measure better the child income inequality and be comparable among countries. It is expected that this inequality should not be too large for children that belong to the same family, so that taxation treatment should not be too different among siblings.

taking into account the differences among her children. X_{it} contains these variables and the parental demographics. As mentioned in the theoretical discussion, we expect a negative relation between the probability of giving equal transfers and the degree of income inequality among children. The last term of equation 7 is the composite error $v_{it} = c_i + u_{it}$, which is formed by the unobserved effect c_i and the idiosyncratic error u_{it}. Although the use of the differences among child variables may be interpreted as accounting for family-child unobserved effects that are common to all children, there is still unobserved heterogeneity within the family. For this reason, and in order to profit from the longitudinal nature of SHARE, we will account for unobserved heterogeneity within the family with a random effects model. Performing a fixed effects model may be useful as well, but the sample is severely reduced to only 236 observations. Even though, a Hausman test gives support to the choice of a random effects model. Moreover, this model allows us to show the marginal effects and find the contribution of all explanatory variables (both time constant and time-varying variables).

3.3 Main results

Table 3 shows the results for the probability of making equal transfers. The first three columns show the results of a pooled logit model with different specifications and the last one contains the results when random effects are considered. Concerning the parental characteristics, we observe that the number of children reduces the probability to give equal transfers. This is also found by Hochguertel and Ohlsson (2009) who use the Health and Retirement Study dataset (HRS). It is more difficult to maintain the equal division of transfers when there are more children who can differ more noticeably with respect to their needs and incomes. There are no significant effects of the household income but belonging to the lowest quintiles of the household net wealth distribution diminishes the probability of equal division. The dilemma between giving equal transfers and behaving more altruistically (dividing unequally) is less important for a wealthier parent as she can tolerate better the loss of utility associated with the equal division. Although education is a proxy of permanent income, we find that years of education affect negatively the probability of equal

division. However, note that given that income, wealth and age are included in the regressions, the permanent income attribute of parental education is less important.

If the computation of child labour income were not possible, we should look at proxies of income like age and education, which however are more related to permanent income (first column). These variables are presented in the form of differences among siblings and affect negatively the probability of equal division. So, a larger difference of incomes among children makes more difficult the decision to give equal transfers, which is in line with our predictions. Column 2 shows clearly our main prediction with the child income: the larger the inequality of income among children, the lower the probability of giving equal *inter-vivos* transfers. For instance, if the child income ratio doubles (departing from equality $y_{max}/y_{min} = 1$), the probability to give equal transfers declines by 5%. The variables *contact with parents* and *distance from parental home* are proxies for child services[9]. In the exchange approach, the parents "buy" services from children by paying accordingly with a transfer, so that children will end up receiving different amounts of transfers. The variables measuring differences in *contact with parents* and *distance from parental home* are negative and significant in all regressions. This means that at the moment to decide between equal and unequal transfers, parents care to some extent for differences in services provided by children, which gives support to exchange motives. Like in the case of the child income inequality, parents will give unequal transfers if the inequality in the provision of child services becomes too large. In the case of *distance from parental home*, it is expected that a child living closer to her parent can offer more services, and that the parent values positively the proximity of her child. Although we don't know the exact motive of the child to live close to her parent, the fact that matters for the decision of dividing equally the transfers is the difference in distance among siblings.

In SHARE, the respondents are also asked about the motive of the financial transfer. A first group of these motives (meet basic needs, and help to face a shock like unemployment, sudden illness and divorce) are related to altruistic and insurance reasons. The second group of motives are

[9] Cox and Rank (1992) consider that the distance between child and parental home is a *proxy* for the provision of child services, since services are more costly to offer when the child lives further from her parent's home.

associated to large amounts of money and include the help with the purchase of a house, a large household expenditure, a major event like a wedding and education expenses. Importantly, this group of transfers are difficult to keep unnoticed by the siblings. A third group of motives stated by the respondents is that they had not specific reasons to transfer. We call these groups *motive 1*, *motive 2* and *motive 3*. The model of the third column of table 3 adds dummy variables for each group of motives, which take value 1 when at least one child received a transfer due to the corresponding motive. The marginal effect of the inequality of income is still significant but decreases from 5.2% to 4.3%. Note that the two first groups of motives reduce the probability to make equal transfers. In the case of *motive 1*, we observe the tension between being altruist and dividing the transfers equally. In the case of the motives associated with large expenditures (*motive 2*) the equal division is less likely because the parent is unable to donate the same high amount of money to all her children. Contrary to the previous effects, the probability of giving equal transfers increases when there are no specific reasons to transfer. This case is close to a situation of a "pure" financial gift with no attached strings. In such a case, the equal division norm prevails. Moreover, Furthermore, the effect of the difference in the number of grandchildren is negative and significant. If one child has a bigger family, then that child has more expenses to cope with, so that she could receive larger transfers from the respondent. And this will reduce the willingness of the parents to give equal transfers.

The model in the last column of table 3 controls for unobserved heterogeneity with random effects. A Hausman test between fixed and random effects (*p-value* = 0.95) does not allow us to reject the null hypothesis of no correlation between the unobserved effect and the covariates, so that we can use a random effects specification. There are not many differences between this model and the pooled logit. Our main variable of interest -child income inequality- still affects negatively the probability of equal transfers and significantly (*p-value* = 0.076), although the marginal effect becomes slightly larger (5.7%).

Table 3. Logit marginal effects of the probability of equal *inter-vivos* transfers

	(1)		(2)		(3)		Random Effects	
Variable	dF/dx	S. E.	dF/dx	S.E.	dF/dx	S.E.	dF/dx	S.E.
Parental characteristics								
Male	0.0160	0.0193	0.0174	0.0189	0.0158	0.0184	0.0183	0.0256
Married	0.0261	0.0287	0.0267	0.0289	0.0307	0.0259	0.0432	0.0326
Age	0.0035***	0.0011	0.0028**	0.0011	0.0009	0.0013	0.0013	0.0016
Years of education	-0.0110***	0.0024	-0.0104***	0.0023	-0.0081***	0.0023	-0.0107***	0.0039
Long term illness	-0.0013	0.0234	-0.0022	0.0237	0.0025	0.0225	-0.0004	0.0246
Number of children	-0.0602***	0.0158	-0.0896***	0.0096	-0.0944***	0.0098	-0.1307***	0.0317
Income quintiles								
1st - lowest	-0.0154	0.0215	-0.0161	0.0236	-0.0233	0.0261	-0.0348	0.0458
2nd	0.0068	0.0345	0.0020	0.0364	-0.0045	0.0396	-0.0118	0.0423
3rd	0.0163	0.0233	0.0135	0.0252	0.0121	0.0298	0.0119	0.0375
4th	0.0139	0.0229	0.0103	0.0240	0.0076	0.0259	0.0106	0.0349
Net wealth quintiles								
1st - lowest	-0.0811**	0.0360	-0.0882***	0.0334	-0.0748***	0.0289	-0.0945**	0.0390
2nd	-0.0701***	0.0193	-0.0740***	0.0178	-0.0648***	0.0155	-0.0866**	0.0352
3rd	0.0006	0.0223	-0.0033	0.0228	0.0038	0.0228	0.0027	0.0366
4th	0.0053	0.0342	0.0059	0.0344	0.0030	0.0361	-0.0007	0.0330
Children characteristics (diff.)								
Age	-0.0115***	0.0040						
Years of education	-0.0087**	0.0034						
Number of children	-0.0150	0.0102	-0.0170	0.0111	-0.0223**	0.0107	-0.0263**	0.0120
Contact with parents x 100	-0.0450***	0.0084	-0.0442***	0.0082	-0.0425***	0.0092	-0.0507***	0.0099
Distance from parent home x 100	-0.0299***	0.0051	-0.0311***	0.0054	-0.0333***	0.0061	-0.0409***	0.0072
Labour Income (ratio)			-0.0522**	0.0209	-0.0430**	0.0213	-0.0568*	0.0320
Motives to make transfers								
Motive1 (altruistic)					-0.1888***	0.0215	-0.2272***	0.0267
Motive2 (large expenses)					-0.1029***	0.0375	-0.1336***	0.0321
Motive3 (no spec. reasons)					0.1146***	0.0267	0.1555***	0.0367
Number of observations	3259		3223		3223		3223	

Regressions include dummies for countries and wave. Robust clustered (by country) standard errors are next to coefficients. *** indicates significance at 1%, ** at 5%, * at 10%.

3.4 Additional checks

We truncate our sample to respondents with up to 3 children because the survey only registers up to three persons receiving financial transfers. But, it could be the case of respondents with four or more children giving transfers only to three or less children. A regression considering all respondents with no limit on the maximum number of children does not change the results considerably. Our variable of interest -income inequality- remains significant and negative. The marginal effect becomes -5.17% (t = -2.88) and -6.63% (t = -2.46) in the logit and random effect logit models, respectively. Furthermore, if we include a dummy indicating that the respondent has both female and male children, the marginal effect of the ratio of child incomes is still significant but its level declines to 3.62%. The reason is that the sex of the children are correlated with the measured of labour income computed for each child.

Table 4. Logit marginal effects of the probability of equal *inter-vivos* transfers by motives

	(motive 1)		(motive 2)		(motive 3)	
Variable	dF/dx	S. E.	dF/dx	S.E.	dF/dx	S.E.
Parental characteristics						
Male	-0.0048	0.0386	0.0314	0.0330	-0.0307	0.0352
Married	0.0519*	0.0303	0.0085	0.0364	0.0465	0.0286
Age	-0.0028	0.0024	0.0004	0.0020	0.0043**	0.0020
Years of education	-0.0137***	0.0038	-0.0047	0.0037	-0.0084***	0.0021
Long term illness	0.0424	0.0376	-0.0236	0.0257	0.0083	0.0458
Number of children	-0.0693***	0.0239	-0.1575***	0.0367	-0.0461	0.0498
Income quintiles						
1st - lowest	-0.0375	0.0569	-0.0063	0.0396	-0.0119	0.0446
2nd	-0.0607	0.0487	0.0035	0.0449	0.0447	0.0377
3rd	-0.0219	0.0363	0.0571*	0.0339	0.0618	0.0377
4th	-0.0374	0.0381	0.0130	0.0310	0.0307	0.0372
Net wealth quintiles						
1st - lowest	-0.0641**	0.0325	-0.0787***	0.0300	-0.0489	0.1190
2nd	-0.0852***	0.0319	-0.0437*	0.0244	-0.0837	0.0539
3rd	0.0269	0.0484	0.0027	0.0424	0.0457	0.0631
4th	0.0433	0.0432	-0.0008	0.0395	-0.0079	0.0679
Children characteristics (diff.)						
Number of children	-0.0089	0.0132	-0.0054	0.0117	-0.0414***	0.0157
Contact with parents x100	-0.0426***	0.0110	-0.0381***	0.0098	-0.0331**	0.0158
Distance from parent home x100	-0.0185	0.0120	-0.0297***	0.0060	-0.0371**	0.0147
Labour Income (ratio)	-0.0625	0.0426	-0.0415*	0.0228	0.0102	0.0746
Number of observations	927		1653		900	

Regressions include dummies for countries and wave. Robust clustered (by country) standard errors are next to coefficients.
*** indicates significance at 1%, ** at 5%, * at 10%.

We also break the sample by the three groups of motives mentioned before and run logit regressions for the equality of transfers in each of these subsamples. The results are reported in table 4. The differences in child income are only significant and negative in the case of parents indicating motives related to larger amounts of money and that are hardly keep unnoticed by the siblings. This result reflects the fact that even in the scenario of larger transfers, the parent cares at some extent about the inequality of child income. The coefficient of child income differences for the parents who mention altruistic related motives is also negative but insignificant (*p-value*=0.143). The child income differences are not relevant to decide the equality of the transfers in the case of parents who had not specific reasons to make transfers. In all the subsamples by motives, the coefficient for the differences in contact with parents is negative and significant, which means that parents care to some degree about differences in services provided by children. Note that the lowest coefficient of this variable is in the third subsample. A possible explanation is that the transfer given without specific reasons is a gift without attached strings and therefore les responsive to differences in services supplied by the children. Similarly, the coefficient for the

differences in the distance to parental home is always negative but only significant for motive 2 and 3. The coefficient is not significant in motive 1, but has *p-value*=0.124.

Table 5. Means of interest variables by motives to make transfers

Means	Motive 1	Motive 2	Motive 3	Total
Parental income	44,683	43,327	41,582	42,192
Parental total transfers	4,032	6,870	4,259	5,202
Child income ratio	1.47	1.45	1.39	1.44
Differences in contact with parents	101.3	96.4	95.9	99.2
Differences in distant to parental home	130.6	121.7	125.8	125.4
Equal transfers (%)	24.2	33.9	54.2	37.9

Interestingly, the respondents indicating no specific reasons (motive 3) show the largest frequency of equal transfers (54.2% in table 5), even though their transfer amounts are higher than those of the parents with more altruistic oriented motives (motive 1). This brings support to the idea of the existence of a norm of equal division. The respondents under motive 1 show the lowest frequency of equal division because more altruistic parents are more likely to make unequal transfers in order maximize their utility. Furthermore, we observe that parents who transfer without specific reasons are in better conditions to make equal transfers because they face less child income inequality. But, once this inequality increases and some altruistic motivations appear, they will be less prone to give equal transfers. Furthermore, the parents grouped in motive 3 observe less differences among their children with respect to the contact provided and the distance of their homes. All these factors ease the decision to make equal transfers.

Finally, a complementary way to analyse the equal division of transfers is to inspect how far the parents are willing to depart from the equal division norm. For this purpose, we create a new dependent variable that measures the degree to which the parents deviate from the equal division norm. For each respondent, we divide the largest transfer given to one of the children over the sum of all transfers and subtract the proportion of the transfers that each child should receive under the norm of equal division. For a family j with n_j children, the expression of the dependent variable is $T_{j,max}/\sum T_{ji} - 1/n_j$. This variable is positive when the division of transfers is unequal and zero when it is equal. Larger values will indicate that the departure from the equal division norm is more intense. As this variable contains a focal point at the value of zero (for equal transfers), it is

appropriate to use a corner solution model. Table 6 shows the results of a Tobit model when we regress the intensity of unequal division against the same set of variables considered in the previous regressions. The results are comparable to those of table 3. Child income inequality affects positively the intensity of unequal division, which is in line with the negative logit estimate for the probability of equal division. As before, two of the proxies for child services *contact* and *distance from parental home* are significant. Their coefficients are positive which also accords with the results of the logit regressions.

Table 6. Tobit estimates of the intensity of unequal division

	Pooled Tobit		Random Effects Tobit	
Variable	dF/dx	S. E.	dF/dx	S.E.
Parental characteristics				
Male	-0.0063	-0.0123	-0.0052	-0.0143
Married	-0.0263	-0.0232	-0.0270	-0.0185
Age	-0.0002	-0.0008	-0.0003	-0.0009
Years of education	0.0038*	-0.0021	0.0039*	-0.0021
Long term illness	-0.0011	-0.0147	-0.0007	-0.0136
Number of children	0.1123***	-0.0089	0.1171***	-0.0166
Income quintiles				
1st - lowest	0.0336***	-0.0117	0.0366	-0.0262
2nd	0.0289	-0.0275	0.0322	-0.0238
3rd	0.0141	-0.0179	0.0172	-0.0207
4th	0.0039	-0.0173	0.0044	-0.0191
Net wealth quintiles				
1st - lowest	0.0770***	-0.0245	0.0737***	-0.0248
2nd	0.0406**	-0.0163	0.0428**	-0.0219
3rd	-0.0005	-0.0188	-0.0014	-0.0204
4th	0.0115	-0.0204	0.0127	-0.0185
Children characteristics (diff.)				
Number of children	0.0180**	-0.0077	0.0190***	-0.0066
Contact with parents x 100	0.0322***	-0.0076	0.0309***	-0.0061
Distance from parental home x 100	0.0218***	-0.0037	0.0226***	-0.0042
Labour Income (ratio)	0.0357**	-0.0144	0.0343**	-0.0167
Motives to make transfers				
Motive1 (altruistic)	0.0709***	-0.0162	0.0688***	-0.0179
Motive2 (large expenses)	0.0146	-0.0315	0.0161	-0.0173
Motive3 (no spec. reasons)	-0.1868***	-0.0188	-0.1824***	-0.0187
Number of observations	3223		3223	

Regressions include dummies for countries and wave. Robust clustered (by country) standard errors are next to coefficients. *** indicates significance at 1%, ** at 5%, * at 10%.

4. Comparison with previous findings

Approximately 35% of parents make equal transfers in Europe, although the cross-country variation can be large, ranging from 7.7% in Ireland to 45.6% in Sweden. This figures come from a sample composed by parents with at least two children, older than 18 and not co-residing, and conditional on the existence of at least one transfer. The most similar results -in terms of sample

construction- with US data are computed by McGarry (1999), who use the first wave of the HRS and the Asset and Health Dynamics Study (AHEAD). She finds that 6.5% and 24.6% of parents from the HRS and AHEAD surveys make equal transfers, respectively. Those figures are not comparable because the HRS wave is restricted to persons between 51 and 61 years old, while the AHEAD is for 70+. Roughly, the percentage could be about 12.9% if we weight both percentages by the number of observations of both datasets with information on equal transfers. Hochguertel and Ohlsson (2009) also use the HRS to follow the 51-61cohort from 1992 to 2002. We infer from their results that between 4.8% and 12.5% of households give equal transfers (about 9.2% over the full period). However, these figures include children of any age and co-residing with parents. It is perhaps more cautious to use the Hochguertel and Ohlsson's figure of 9.2% for equal transfers in US.

Different attitudes and values and institutions across countries may shed some light to explain different patterns of equal division. Table 7 contains some of the values and variables with a potential influence on the transfer division variation by country. For example, a proxy to altruism is constructed with a question from the World Values Survey (WVS) and the European Social Survey (ESS)[10]. The US is ranked as the third country least altruistic (together with Germany) among 15 countries but there is not an evident relation between altruism and equal division in the sample. Spain is the second country most altruistic but its percentage of equal division is rather similar to that of US. Similarly, the political left-right position does not contribute to explain the different patters of equal division. For instance, Poland, Czech Republic and US are the countries more into the right side spectrum of the political scale, but they differ a great deal in the division of transfers. Furthermore, we compute the attitudes to economic inequality with the WVS, but again, we don't observe any evident relation between this variable and the equality of transfers. For instance, US, Sweden, Greece and Poland show the most favourable attitude to economic inequality as incentives but their patters of equal division are very different.

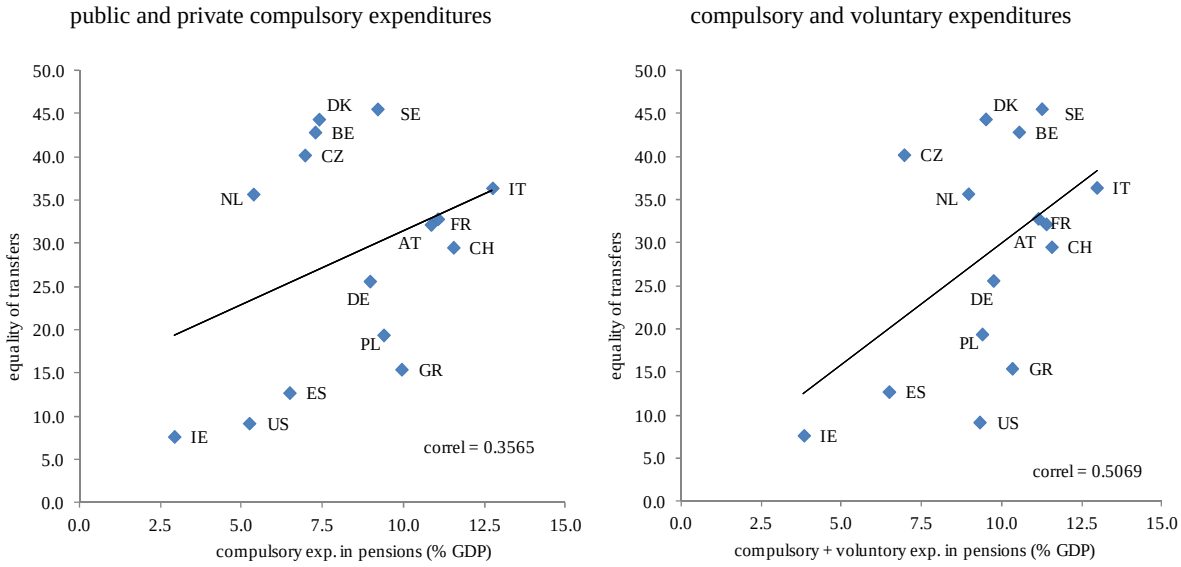
[10] This is a question to derive the Schwartz human value type of benevolence which is associated with altruism. The question is "tell me how much each person is or is not like you: It's very important to her/him to help the people around her/him. She/he wants to care for their well-being".

Table 7. Attitudes and macro variables by country (around 2006)

Country	Equality of transfers	Altruism	Political scale	Inequality attitude	Mandatory expen. in pensions	Man. and voluntary expen. in pensions	Gini (net)	Gini (market)	Gini makt / Gini net
Austria	32.22	4.72	5.42	4.63	10.85	11.38	26.68	49.17	1.84
Belgium	42.90	4.77	5.26	5.49	7.27	10.54	25.33	38.44	1.52
Czech Republic	40.25	4.30	5.96	5.76	6.95	6.95	26.09	44.37	1.70
Denmark	44.40	4.80	5.51		7.39	9.50	24.21	48.52	2.00
France	32.87	4.42	4.79	5.13	11.06	11.14	27.80	51.28	1.84
Germany	25.66	4.53	4.75	4.54	8.96	9.73	29.09	52.73	1.81
Greece	15.47	4.56	5.12	6.08	9.94	10.32	33.18	41.76	1.26
Ireland	7.69	4.69	5.62	5.94	2.92	3.83	30.99	42.05	1.36
Italy	36.45	5.12	5.08	6.01	12.75	12.97	33.25	45.02	1.35
Netherlands	35.73	4.80	5.22	5.67	5.36	8.95	26.95	50.52	1.87
Poland	19.44	4.70	5.93	6.82	9.39	9.39	30.85	44.67	1.45
Spain	12.77	4.96	4.62	5.66	6.48	6.48	31.24	37.13	1.19
Sweden	45.58	4.91	5.59	6.10	9.20	11.25	23.20	45.78	1.97
Switzerland	29.57	4.78	5.23	3.58	11.54	11.56	29.93	46.86	1.57
United States	9.23	4.53	5.70	6.08	5.24	9.31	36.88	46.94	1.27

Note: The score for altruism is computed from the question "tell me how much each person is or is not like you: It's very important to her/him to help the people around her/him. She/he wants to care for their well-being". The recoded scale goes from 6 (very much like me) to 1 (not like me at all). So, a higher score means more altruism. For Europe and US, the ESS (wave 2004) and the WVS (wave 2006) are used respectively. The political scale indicates the political self-position from 1 (left) to 10 (right). The inequality attitude score is computed from a question where the respondent must express his agreement, in a scale from 1 to 10, with the statement: incomes should be made more equal (1) vs. we need larger income differences as incentives (10). Both the political scale and the inequality attitude come from the WVS (waves 1999-2007). All these three value measures are computed for people 50+. The gini coefficients come from the Standardized World Income Inequality Database (SWIID) for year 2006. Mandatory expenditures in pensions correspond to private and public expenditure in old-age benefits as % of GDP for year 2006; and voluntary expenditures correspond to voluntary private expenses in old-age benefits. This data comes from the OECD social expenditure database. Czech Republic and Poland have not data available for voluntary expenses.

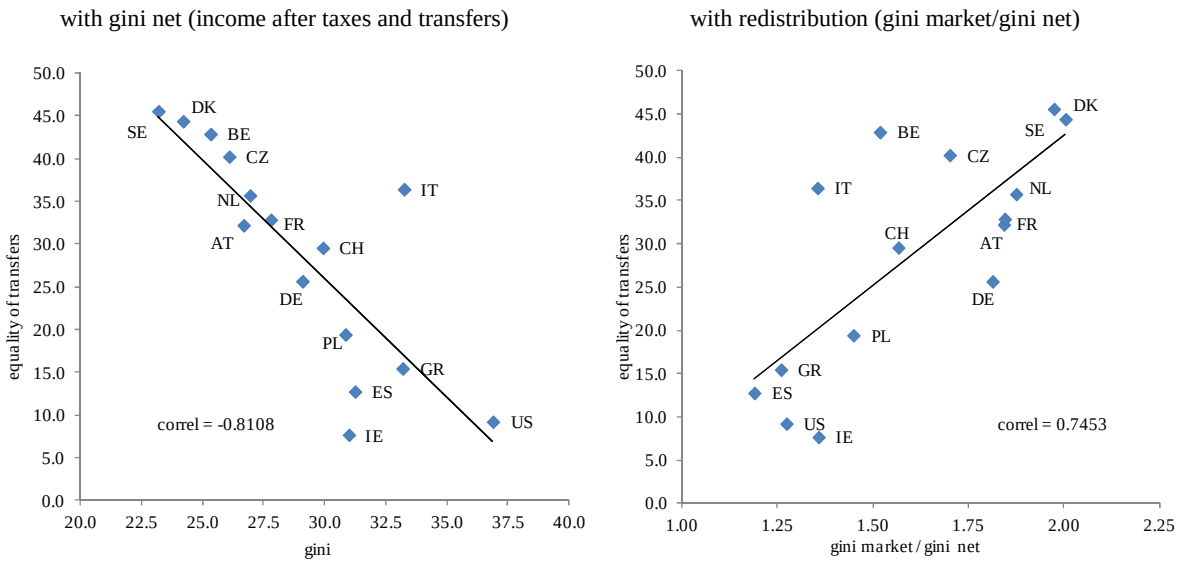
Figure 2. Equality of transfers vs expenditures in pensions



In the theoretical framework we observe that richer parents may be more prone to give equal transfers. So, individuals from countries with more generous pension regimes might be in better position to divide their transfers equally. Although weakly, this is what we observe when the

division of transfers is plotted against the public and private expenses in mandatory pension benefits (as % of GDP) in figure 2. A closer proxy for pension benefits should take into account the pensions from the voluntary private plans, given the importance of these plans in some countries. After doing this, we observe a sharper positive relation between pension expenses and equality of transfers (second panel of figure 2). However, the variable that shows the clearest relation with the division of transfers is the gini coefficient of net incomes (see first panel of figure 3). Countries with less income inequality have a higher frequency of equal transfers. Therefore, siblings living in a country less unequal will also show lower income differences. This pattern suggests that parents will be more likely to divide equally when the child income differences are lower. Furthermore, the degree of redistribution in the country -measured as the ratio between the gini of market incomes over the gini of net incomes- is positively related to the equality of transfers (second panel of figure 3). This means that the efforts of the governments to redistribute incomes reduce the need of parents to make compensatory transfers to their children.

Figure 3. Equality of transfers vs income inequality and redistribution



None of the attitudes and values explored at country level shows a clear relation with the equal division of transfers. Only macro variables like pension expenditures and income inequality suggest that the lower frequency of equal division of *inter-vivos* transfers found in studies with

American data may respond to the higher inequality and relatively lower pension expenditures in US. This is confirmed by the results of a logit regression for the probability of making *inter-vivos* transfers that includes some country specific variables (first column of table 8). The Gini measured with net incomes reduces the probability of making equal transfers, whilst the Gini measured with market incomes increases it; i.e. countries that face more income redistribution exhibit a larger share of parent dividing equally. Likewise, the countries with higher pension benefit expenditures (compulsory and voluntary) show a larger frequency of equal transfers. The altruism and political scale variables are not significant to explain country differences in the division of transfers, but once non-linearities are included, the altruism becomes significant (second column of table 8). This in line with the theoretical framework as it is not possible to establish a linear effect of the altruism parameter on the probability of making equal transfers $\left(\frac{\partial z^*}{\partial \beta} \lesseqgtr 0\right)$. Importantly, the child income differences, the gini and the pension variables remain significant and with the expected signs in any specification.

Table 8. Logit marginal effects of the probability of equal *inter-vivos* transfers, including country specific variables

Variables	(1)		(2)	
	dF/dx	S. E.	dF/dx	S. E.
Country variables				
Gini of net incomes	-0.0294***	0.0043	-0.0350***	0.0020
Gini of market incomes	0.0036*	0.0020	0.0030**	0.0015
Altruism	0.0534	0.0764	-6.5339***	0.9559
Altruism^2			0.7049***	0.1004
Political scale	0.0240	0.0510	-0.5782	0.7411
Political scale^2			0.0536	0.0694
Pension benefit expenditure	0.0169*	0.0097	0.0104*	0.0058
Children characteristics (diff.)				
Number of children	-0.0217**	0.0107	-0.0227**	0.0108
Contact with parents x 100	-0.0433***	0.0090	-0.0425***	0.0091
Distance from parental home x 100	-0.0323***	0.0063	-0.0333***	0.0061
Labour Income (ratio)	-0.0428*	0.0222	-0.0449**	0.0204
Motives to make transfers				
Motive1 (altruistic)	-0.1897***	0.0235	-0.1879***	0.0228
Motive2 (large expenses)	-0.0985***	0.0377	-0.1029***	0.0372
Motive3 (no spec. reasons)	0.1200***	0.0283	0.1176***	0.0270
Number of observations	3223		3223	

Regressions include variables of parental characteristics and wave dummy. Robust clustered (by country) standard errors are next to coefficients. *** indicates significance at 1%, ** at 5%, * at 10%.

It is important to note that the available data don't allow us to establish if American parents are less aware of the norm of equal division than European parents. It could be a combination of

awareness of this norm and income inequality which explains the differences among countries. In any case this norm is easier to fulfil when child incomes don't differ too much.

5. Conclusion

Approximately 35% of European parents from the dataset SHARE make equal transfers, although the cross-country variation can be large. In previous studies, mostly based on American data, the share of equal division of *inter-vivos* transfers is lower, about 9.2% depending of the study. In this paper we argue that altruistic parents are also concerned with a norm of equal division. Thus, parents do not fully offset child income inequality as the altruistic model of transfers predicts. Parents start to give larger transfers to poorer children if the child income inequality becomes unbearable. To sustain this idea, we find econometric evidence about the negative effect of child income inequality on the probability of giving equal transfers under different specifications. Furthermore, we show that contextual variables like the gini coefficient and the pension expenditures help to explain country differences with respect to the division of transfers. In this regard, the lower frequency of equal division of *inter-vivos* transfers found in studies with American data may respond to the higher inequality and relatively lower pension expenditures in US.

References

Albertini, M.; M. Kohli and C. Vogel (2007), "Intergenerational transfers of time and money in European families: common patterns – different regimes?", Journal of European Social Policy 17(4); 319-334.

Andreoni, J. and B.D. Bernheim (2009), "Social image and the 50-50 norm: a theoretical and experimental analysis of audience effects", Econometrica 77(5): 1607–1636.

Arrondel, L and A. Masson (2006), "Altruism, exchange or indirect reciprocity: what do the data on family transfers show?", in S.C. Kolm and J. Mercier-Ytier eds., Handbook on the Economics on Giving, Reciprocity and Altruism (North Holland).

Barro, R.J. (1974), "Are government bonds net wealth?", Journal of Political Economy 82: 1095-1117.

Becker, G.S. (1974), “A theory of social interactions”, Journal of Political Economy 82: 1063-1093.

Bernheim, B.D., A. Shleifer and L.H. Summers (1985), “The strategic bequest motive”, Journal of Political Economy 93:1045-1076.

Bernheim, B.D. and S. Severinov (2003), ‘‘Bequests as Signals: An Explanation for the Equal Division Puzzle’’, Journal of Political Economy 111, 733–764.

Börsch-Supan, A. And H. Jürges (editors) (2005), “The Survey of Health, Aging and Retirement in Europe - Methodology”. Mannheim Research Institute for the Economics of Aging (MEA).

Börsch-Supan, A. et al (editors) (2005), “Health, Ageing and Retirement in Europe. First Results from the Survey of Health, Ageing and Retirement in Europe”. Mannheim Research Institute for the Economics of Aging (MEA).

Börsch-Supan, A. et al (editors) (2008), “First Results from the Survey of Health, Ageing and Retirement in Europe (2004-2007). Starting the Longitudinal Dimension”. Mannheim Research Institute for the Economics of Aging (MEA).

Camerer, C. and E. Fehr (2004), “Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists”, in: J. Henrich, R. Boyd, S. Bowles, H. Gintis, E. Fehr, R. McElreath (Eds.), *Foundations of Human Sociality - Experimental and Ethnograhic Evidence from 15 Small-Scale Societies*, Oxford University Press.

Cox, Donald. (1987), “Motives for private income transfers”, Journal of Political Economy 95: 508-46.

Cox, D. and M.R. Rank (1992), “Inter-vivos transfers and intergenerational exchange”, Review of Economics and Statistics 74(2): 305–314.

Cox, D. & G. Jakubson (1995), “The connection between public transfers and private interfamily transfers”, Journal of Public Economics 57: 129-167.

Cox, D. and M. Fafchamps (2008), “Extended family and kinship networks: economic insights and evolutionary directions” in Handbook of Development Economics, Volume 4 (North Holland).

Cremer H. and P. Pestieau (1996), “Bequests as heir ‘discipline device’”, Journal of Population Economics 9(4): 405–414.

Fehr, E. and K. Schmidt (2002), “Theories of Fairness and Reciprocity - Evidence and Economic Applications”, in: M. Dewatripont, L. Hansen and St. Turnovsky (Eds.), *Advances in Economics and Econometrics - 8th World Congress*, Econometric Society Monographs, Cambridge University Press.

Halvorsen, E. and Thoresen, T.O. (2011), “Parents’ Desire to Make Equal Inter Vivos Transfers”, CESifo Economic Studies 57(1): 121-155.

Harmon, C., H. Oosterbeek and I. Walker (2003), "The Returns to Education: Microeconomics", Journal of Economic Surveys 17(2): 115-156.

Hochguertel, S. and H. Ohlsson (2009), "Compensatory *inter viv*os gifts", Journal of Applied Econometrics 24: 993-1023.

Kolm, Serge-C. (2006), "Introduction to the economics of giving, altruism and reciprocity" in S.C. Kolm and J. Mercier-Ytier eds., Handbook on the Economics on Giving, Reciprocity and Altruism (North Holland).

Laferrere, A. and F.C. Wolff (2006), "Microeconomic models of family transfers" in S.C. Kolm and J. Mercier-Ytier eds., Handbook on the Economics on Giving, Reciprocity and Altruism (North Holland).

Laitner J. (1997), "Intergenerational and interhousehold economic links", In: Handbook of Population and Family Economics, Vol. 1A, Rosenzweig MR, Stark O (eds). North-Holland: Amsterdam; 189–238.

Light, A. and K. McGarry (2004), "Why parents play favourites: explanations for unequal bequests", American Economic Review, 94 (5): 1669-1681.

Lundholm, M. and H. Ohlsson (2000), "Post mortem reputation, compensatory gifts and equal bequests", Economics Letters 68: 165-171.

McGarry, Kathleen (1999), "Inter vivos transfers and intended bequests", Journal of Public Economics 73: 321-351.

McGarry & Schoeni (1995), "Transfer Behavior in the Health and Retirement Study: Measurement and the Redistribution of Resources within the Family", The Journal of Human Resources 30(0): S184-S226, Special Issue.

Norton, E.C. and C.H. Van Houtven. (2006), "Inter-vivos Transfers and Exchange" Southern Economic Journal, 73(1): 157-172.

Pestieau P. (2003), "The role of gift and estate transfers in the United States and in Europe", In: Death and Dollars: The Role of Gifts and Bequests in America, Munnell AH, Sund´en A (eds). Brookings: Washington, DC; 64–85.

Tomes, N. (1981), "The family, inheritance and the intergenerational transmission of inequality", Journal of Political Economy 89(5), 928–958.

Villanueva, E. (2002), "Parental altruism under imperfect information: Theory and evidence", Economics Working Papers 650, Universitat Pompeu Fabra.

Wilhelm, Mark O. (1996), "Bequest behavior and the effect of heir's earnings: Testing the altruistic model of bequests", American Economic Review 86: 874-892.

Appendix

Estimates of the log of hourly labour income (employees 18-65 in full-time jobs)

Variables	Austria	Belgium	Cz. R.	Germany	Denmark	Spain	France	Greece	Italy	Nether.	Poland	Sweden
Women												
Age	0.0742	0.0586	0.0343	0.1367	0.1135	0.0502	0.0555	0.0549	0.0354	0.1226	0.0974	0.1648
	0.0122	*0.0135*	*0.0089*	*0.0087*	*0.0079*	*0.0107*	*0.0092*	*0.0089*	*0.0037*	*0.0153*	*0.0087*	*0.0127*
Age sq.	-0.0007	-0.0005	-0.0003	-0.0014	-0.0011	-0.0003	-0.0004	-0.0005	-0.0002	-0.0013	-0.0009	-0.0016
	0.0002	*0.0002*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0000*	*0.0002*	*0.0001*	*0.0001*
Married	-0.0134	0.0699	0.0051	0.0408	0.0237	0.0820	-0.0089	0.0914	0.0637	0.1151	0.0414	0.1069
	0.0376	*0.0275*	*0.0247*	*0.0237*	*0.0253*	*0.0274*	*0.0235*	*0.0252*	*0.0109*	*0.0365*	*0.0220*	*0.0432*
Low sec.	0.0387	0.1533	0.3367	0.4726	0.4647	0.1775	0.2234	0.1291	0.1342	0.0322	0.4631	0.0109
	0.1703	*0.0800*	*0.0373*	*0.2388*	*0.2346*	*0.0518*	*0.0592*	*0.0469*	*0.0276*	*0.1283*	*0.2126*	*0.0920*
Upper sec.	0.4825	0.2781	0.6566	0.9150	0.6622	0.4382	0.3908	0.3730	0.3894	0.3131	0.3496	0.0885
	0.1663	*0.0690*	*0.0176*	*0.2338*	*0.2338*	*0.0482*	*0.0533*	*0.0354*	*0.0263*	*0.1152*	*0.0382*	*0.0684*
Tertiary	0.8638	0.5391	1.1681	1.1427	0.8581	0.8480	0.7313	0.7798	0.6725	0.6055	1.1044	0.2464
	0.1690	*0.0655*	*0.0299*	*0.2340*	*0.2339*	*0.0450*	*0.0539*	*0.0363*	*0.0284*	*0.1117*	*0.0401*	*0.0685*
Constant	0.1383	0.6838	-0.6993	-1.6326	-0.5795	-0.0242	0.3110	-0.0855	0.8273	-0.5128	-2.1601	-1.8686
	0.2747	*0.2803*	*0.1805*	*0.2875*	*0.2862*	*0.2237*	*0.1851*	*0.1766*	*0.0730*	*0.3174*	*0.1689*	*0.2688*
n	1439	1090	2040	2427	2256	1815	2834	1259	5062	938	4633	2263
R2	0.222	0.231	0.065	0.423	0.319	0.358	0.179	0.432	0.349	0.300	0.344	0.237
Men												
Age	0.0716	0.0607	0.0603	0.1315	0.1077	0.0527	0.0791	0.0579	0.0378	0.1240	0.0774	0.1483
	0.0081	*0.0091*	*0.0075*	*0.0062*	*0.0072*	*0.0073*	*0.0068*	*0.0064*	*0.0029*	*0.0069*	*0.0074*	*0.0116*
Age sq.	-0.0007	-0.0005	-0.0007	-0.0013	-0.0011	-0.0004	-0.0007	-0.0005	-0.0003	-0.0012	-0.0008	-0.0015
	0.0001	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0000*	*0.0001*	*0.0001*	*0.0001*
Married	0.0991	0.0844	0.1204	0.1414	0.2175	0.1299	0.1252	0.1063	0.0861	0.2105	0.2616	0.2374
	0.0280	*0.0226*	*0.0225*	*0.0228*	*0.0341*	*0.0254*	*0.0226*	*0.0213*	*0.0093*	*0.0238*	*0.0259*	*0.0429*
Low sec.	0.4888	0.1639	0.6448	0.3564	0.2520	0.1193	0.1291	0.0797	0.1238	0.0518	-0.3614	-0.0995
	0.5199	*0.0451*	*0.0409*	*0.1640*	*0.2102*	*0.0282*	*0.0343*	*0.0296*	*0.0167*	*0.0319*	*0.2572*	*0.0613*
Upper sec.	0.8512	0.3038	0.9083	0.7853	0.4274	0.3458	0.2231	0.1891	0.2810	0.2140	0.3336	0.0569
	0.5190	*0.0395*	*0.0146*	*0.1597*	*0.2089*	*0.0269*	*0.0271*	*0.0226*	*0.0167*	*0.0293*	*0.0348*	*0.0507*
Tertiary	1.1310	0.5056	1.3558	1.1099	0.6203	0.6236	0.5401	0.5304	0.5937	0.5652	0.9907	0.2465
	0.5193	*0.0401*	*0.0271*	*0.1598*	*0.2093*	*0.0262*	*0.0293*	*0.0262*	*0.0214*	*0.0303*	*0.0392*	*0.0527*
Constant	-0.0609	0.7719	-1.1246	-1.4321	-0.0859	0.3155	0.1202	0.2116	0.9999	-0.5131	-1.5499	-1.1656
	0.5424	*0.1912*	*0.1562*	*0.1964*	*0.2577*	*0.1462*	*0.1357*	*0.1224*	*0.0555*	*0.1436*	*0.1433*	*0.2450*
n	2796	2015	2556	5077	3008	3006	4248	1971	7991	4270	5670	2980
R2	0.240	0.277	0.197	0.475	0.323	0.317	0.256	0.383	0.303	0.428	0.250	0.241

Primary education is the reference for the education dummies. Standard errors in italics.